

The Healthcare Case Study

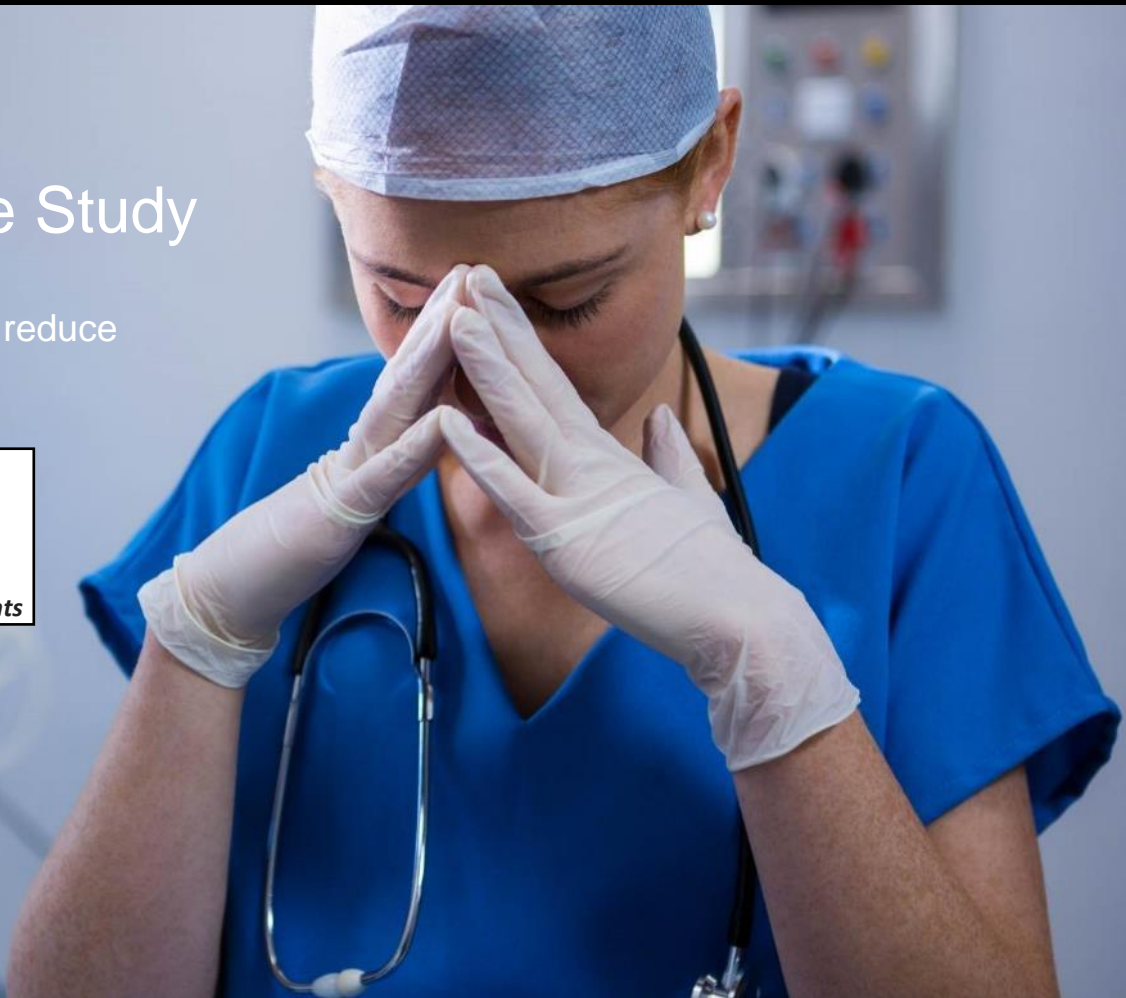
Leveraging Brain Science and AI to reduce patient harm and death



Pilot Training Conference

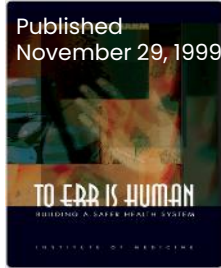
Day 1 – Tuesday 30th April 2024 – Session 3

Adaptive Learning in High-Stakes Work Environments



“Islands of excellence surrounded by oceans of mediocrity”

2



268

Avoidable Deaths
per day

National Institutes of Health



National Center for
Complementary and
Integrative Health

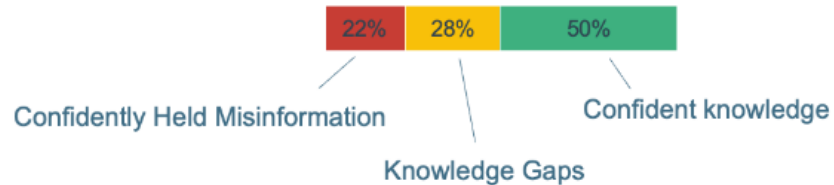
2023 Estimate

328

Avoidable Deaths
per day



Typical Knowledge Across MD's, Nurses and Technicians



"Islands of excellence surrounded by oceans of mediocrity"

3



>50%

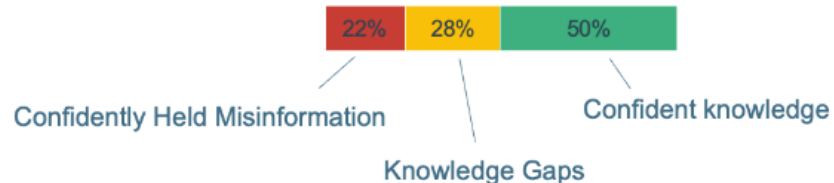
Reduction in training time

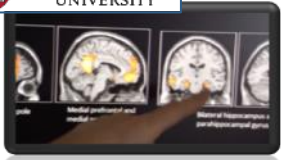
~80%

Reduction in Patient Harm



Typical Knowledge Across MD's, Nurses and Technicians





Advanced Brain Science of Human Learning⁴

1953
27 years old



Henry Molaison ("HM")

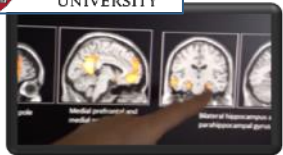
82 years old



Hippocampus



All new memory (learning)
is created in the Hippocampus
and distributed for storage
during sleep.



Advanced Brain Science of Human Learning⁵

1992

First fMRI Images published



Massachusetts General Hospital
Founding Member, Mass General Brigham

ADVANCES IN MOTION

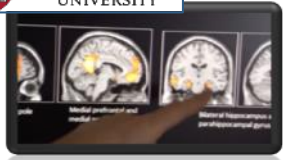


HARVARD
UNIVERSITY

Kenneth Kwong, PhD

Associate Professor, Martinos Center for Biomedical Imaging,
Massachusetts General Hospital

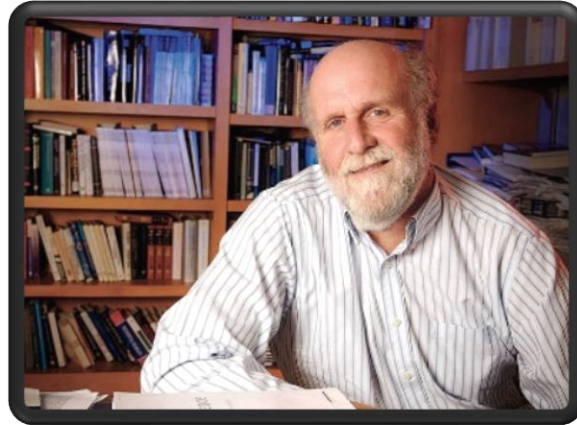




Advanced Brain Science of Human Learning⁶

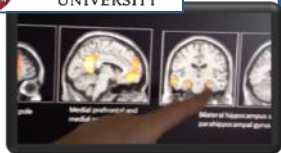
1993

Dan Schacter, PhD



1953 "HM"





Engaging the Neuro Mechanics of Human Learning ⁷

2011

Robert Bjork, PhD, UCLA
Bjork Center of Learning
and Forgetting

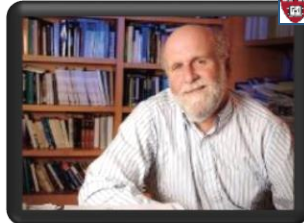
UCLA



Dan Schacter, PhD



HARVARD
UNIVERSITY



"Triggers & Switches"

Repetition
Emotion
Elaboration Attention
Salience Retrieval
Priming
Feedback
Spacing
Honesty
Motivation



Rich Mayer
PhD, UCSB



Roddy Roediger
PhD, Washington University at St.
Louis



Robert Birnbaum
PhD, MD, Vice President of Professional
Development & Implementation Science at
Mass General Brigham



Elizabeth Bjork
PhD, UCLA



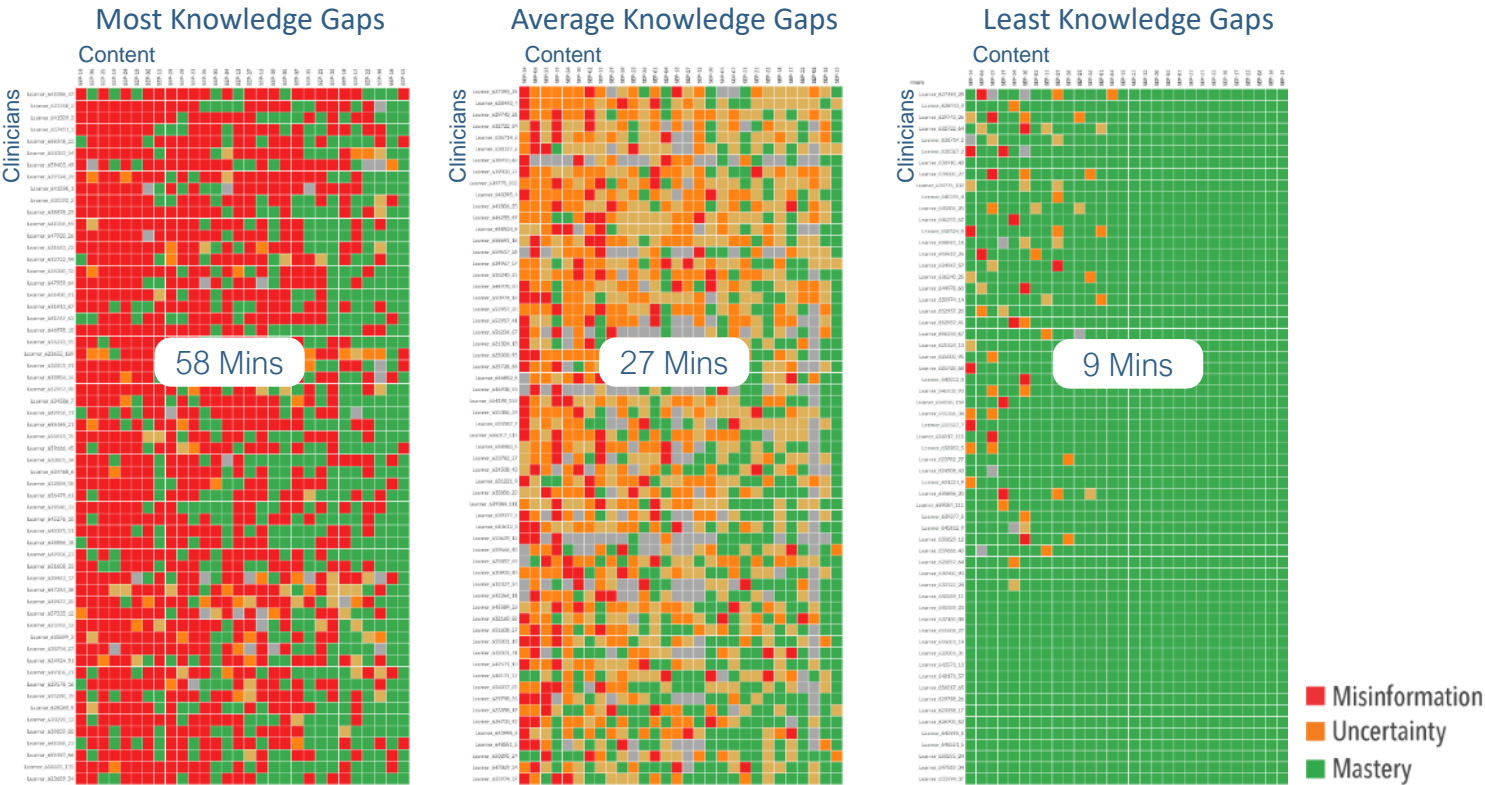
Kathleen McDermott
PhD, Washington University at St.
Louis



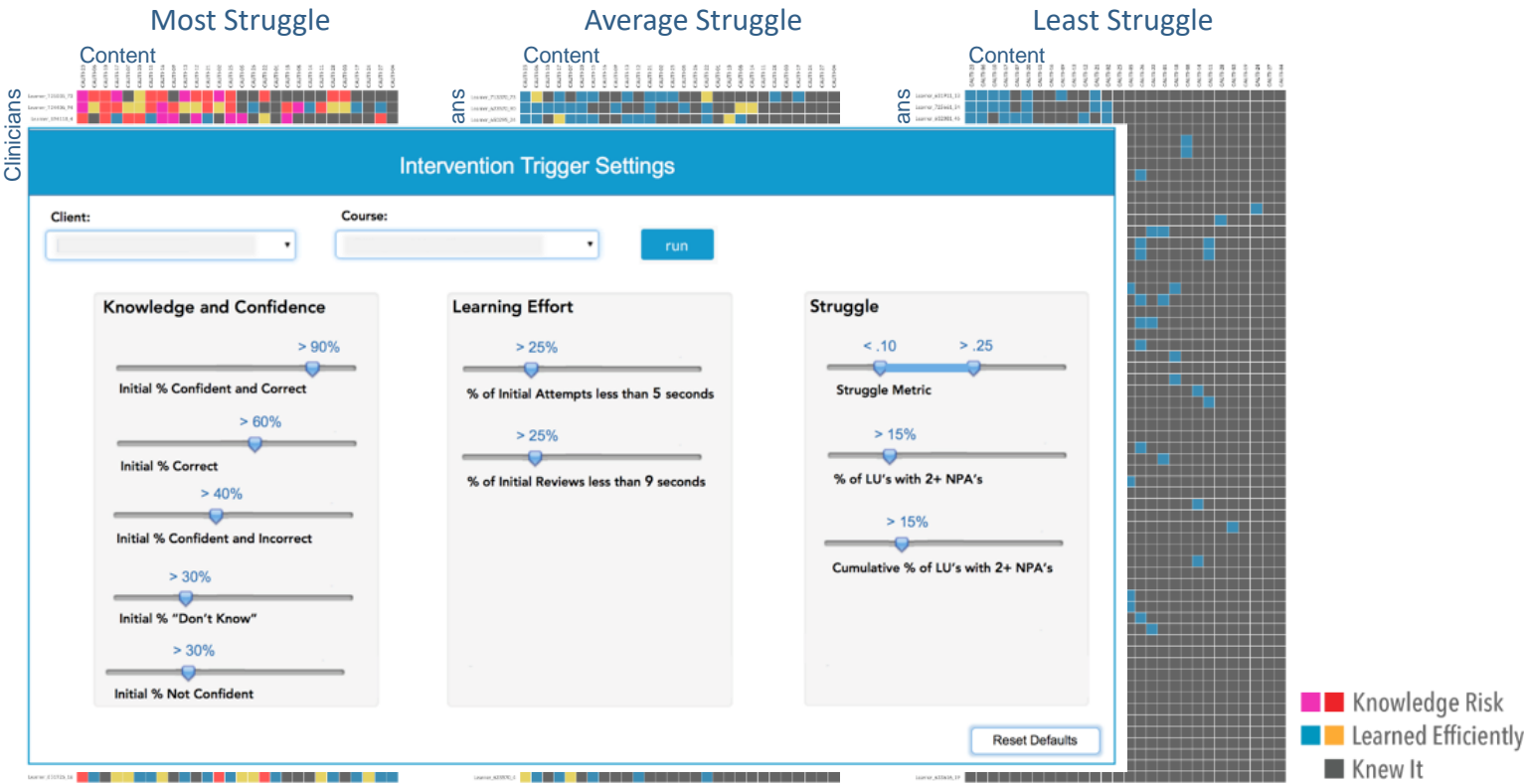
Chad Lane
PhD, University of Illinois

2 Million learners per year
4.3 Billion Learner Interactions

Training Efficiency: 3,700 Nurses at 21 Hospitals—CLABSI



Training Efficiency: 3,700 Nurses at 21 Hospitals—CLABSI



Training Efficiency: 3,700 Nurses at 21 Hospitals—CLABSI

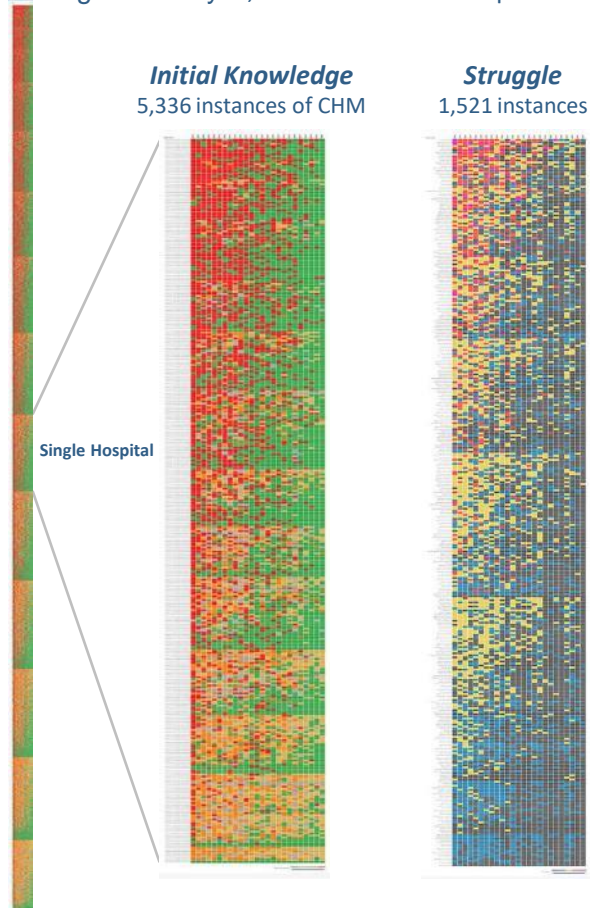


- **23 Intermountain hospitals**
- **3,707 nurses trained**
- **25,129 instances of CHM**
- **29,838 instances of Uncertainty**

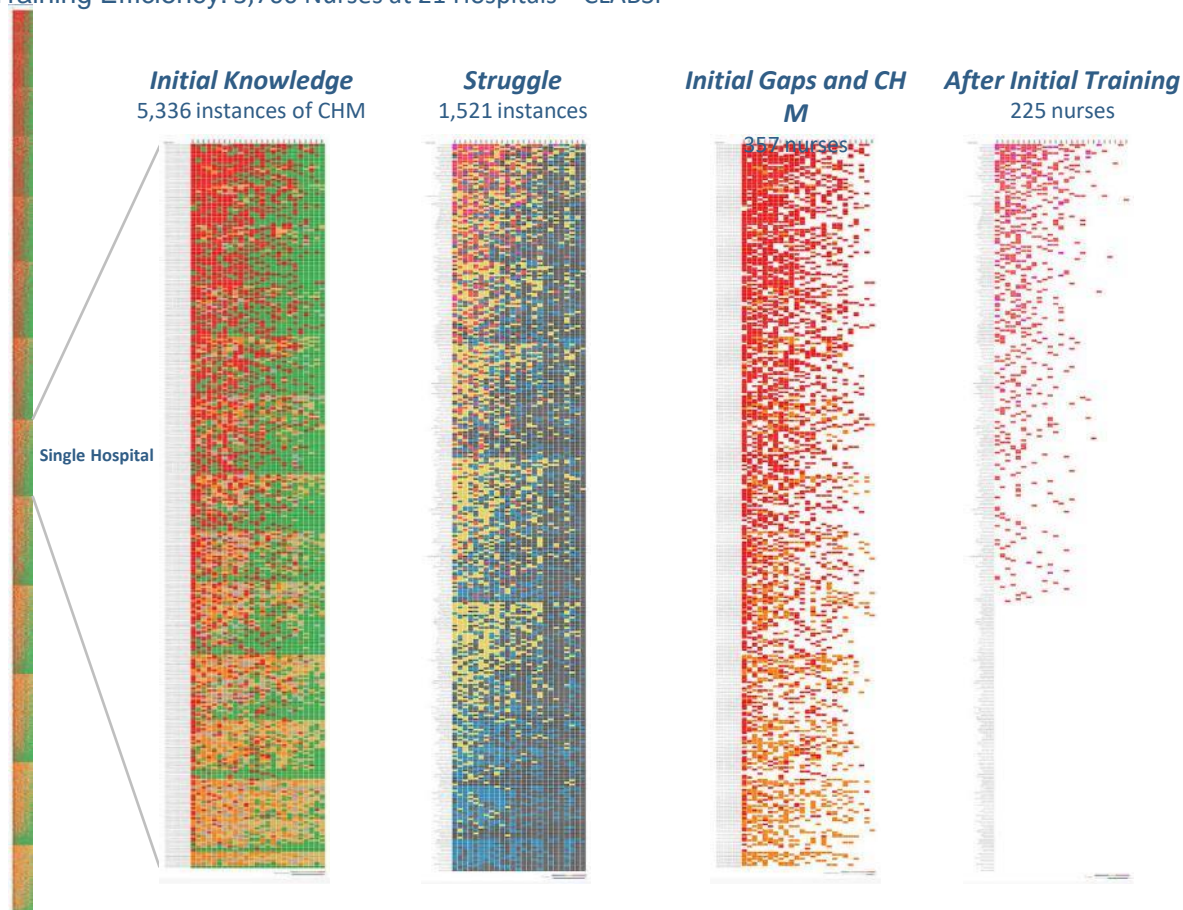
Advanced Visual Analytics

12

Training Efficiency: 3,700 Nurses at 21 Hospitals—CLABSI

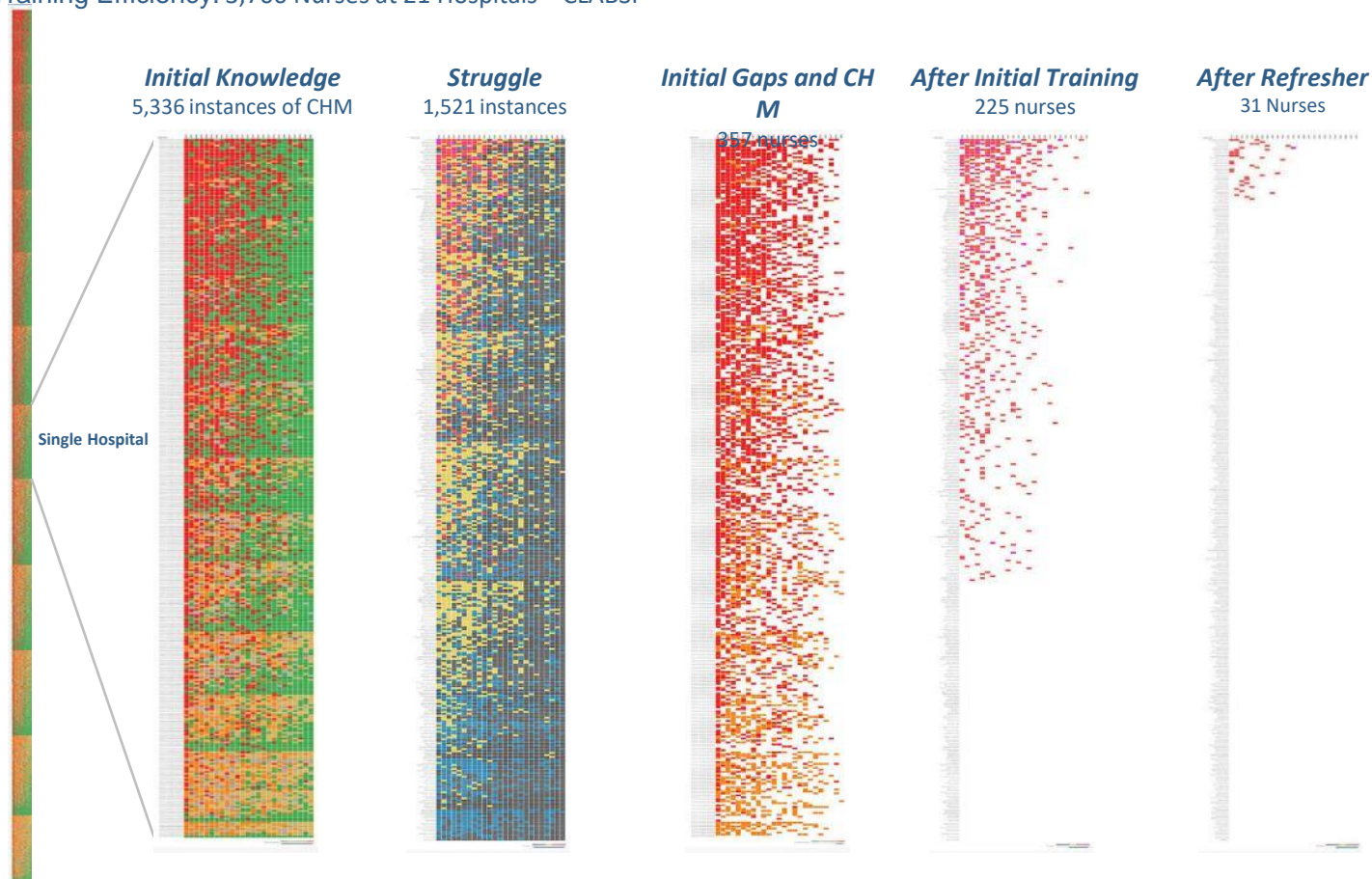


Training Efficiency: 3,700 Nurses at 21 Hospitals—CLABSI



Advanced Visual Analytics

Training Efficiency: 3,700 Nurses at 21 Hospitals—CLABSI



15

Initial Knowledge
5,336 instances of CHM

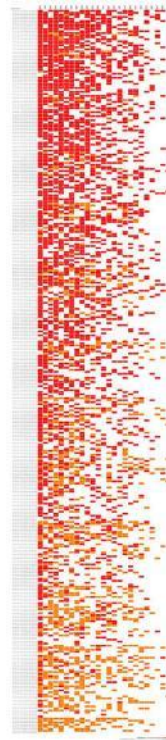


Single Hospital

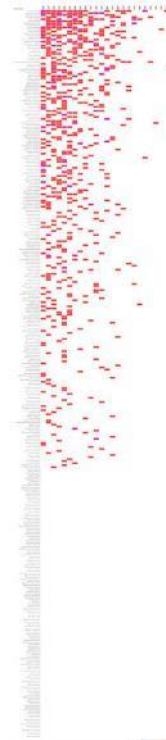
Struggle
1,521 instances



Initial Gaps and CH



After Initial Training
225 nurses



After Refresher
31 Nurses



Consultations

Whitefish, Kelco (1 of 1)

- Internal Jugular Vein
- Subclavian Vein
- Internal Jugular Vein
- Internal Jugular Vein
- Subclavian Vein
- Subclavian Vein

Answer

Question

1 Internal Jugular Vein Subclavian Vein

2 Subclavian Vein Subclavian Vein

3 Internal Jugular Vein Subclavian Vein

4 Internal Jugular Vein Subclavian Vein

5 Subclavian Vein Subclavian Vein

6 Subclavian Vein Subclavian Vein

QUESTION ID

ANSWER

Internal Jugular Vein

Subclavian Vein

Internal Jugular Vein

Internal Jugular Vein

Subclavian Vein

Subclavian Vein

Correct Answer

Incorrect Answer

Incorrect Answer

Incorrect Answer

Incorrect Answer

Incorrect Answer

*Not on the preferred page for assessment (this client is not a student)

1/1/17

Results/Outcomes

- Amplifire CLABSI course, modified for SCL Health policies, procedure, and products
- Additional education tailored to common knowledge gaps



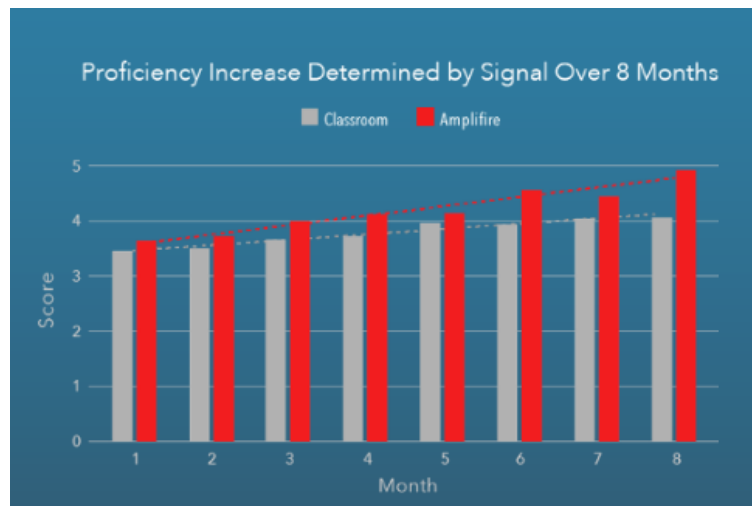
Identified and remediated knowledge gap and CHM in our staff



8 Hrs.  **1 Hr. 5 mins**

Classroom Training

Adaptive Platform Training



19.8% 
Improved Proficiency

 Providence

44,000

Hours returned to clinical care in 8 months

 Scripps

28,000

Hours returned to clinical care in 2022

Medivac Pilot Training



Taking on Medivac Pilot Training

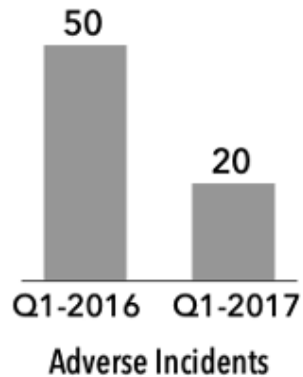
84%
reduction in Training Time

FAA Mandatory Training

Time in Legacy Training: 30.90 hours

Time in Amplifire: 4.87 hours

60%
reduction in Adverse Incidents



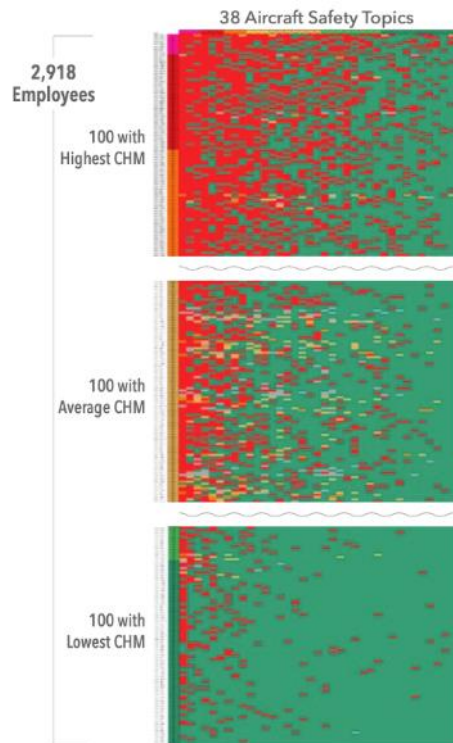
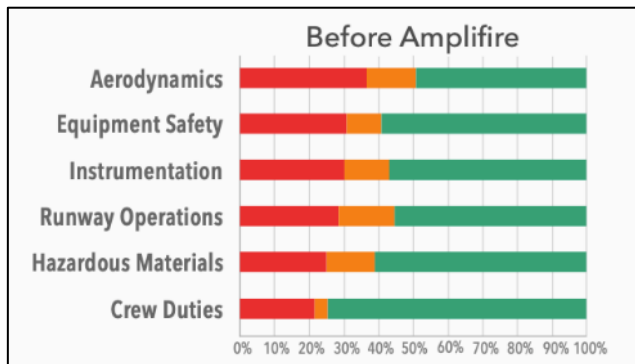
Taking on Medivac Pilot Training

20

FAA Mandatory Training

Time in Legacy Training: 30.90 hours

Time in Amplifire: 4.87 hours



82%

Retention at 12-months

AI Content Assistant

Embedded AI

21

amplifire

AccountAuthoringLearningJohn Smith

CoursesResourcesQuestionsPagesTagsSearch

The Science Institute - Introduction to Biology
Biology Level I

BackNext

Exploring the Steps of the Scientific Method in Biology

Preview

You can't publish content with publishing issues, view issues here

This question was create with AI Shared question

Question ①

Question Intro

Welcome to the fascinating world of biology! As budding biologists, it's crucial to understand the scientific method, a fundamental tool that helps us explore and uncover the mysteries of the natural world.

Question Stem*

Which of the following options correctly outlines the steps of the scientific method, a systematic approach used by biologists to investigate and understand natural phenomena?

Answers ①

☒ Observation, Hypothesis, Experimentation, Analysis, Prediction, Conclusion

☐ Hypothesis, Analysis, Conclusion, Observation, Experimentation, Prediction

☐ Experimentation, Observation, Analysis, Conclusion, Hypothesis, Prediction

Add answer +

AI Assistant

Source contentScientific Method Basics

Expert ToneBiology Professor

AudienceBiology Level I

Learning ObjectiveSteps and process of using the scient...

Known MistakesSelect

Prompt templateWrite a question of low difficulty for L...

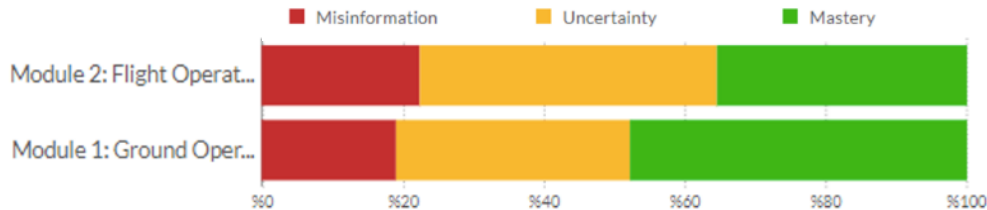
AI PromptWrite a question of low difficulty for the learning objective steps and process of using the scientific method.

Create for me

Boeing 737 Max Return to Service

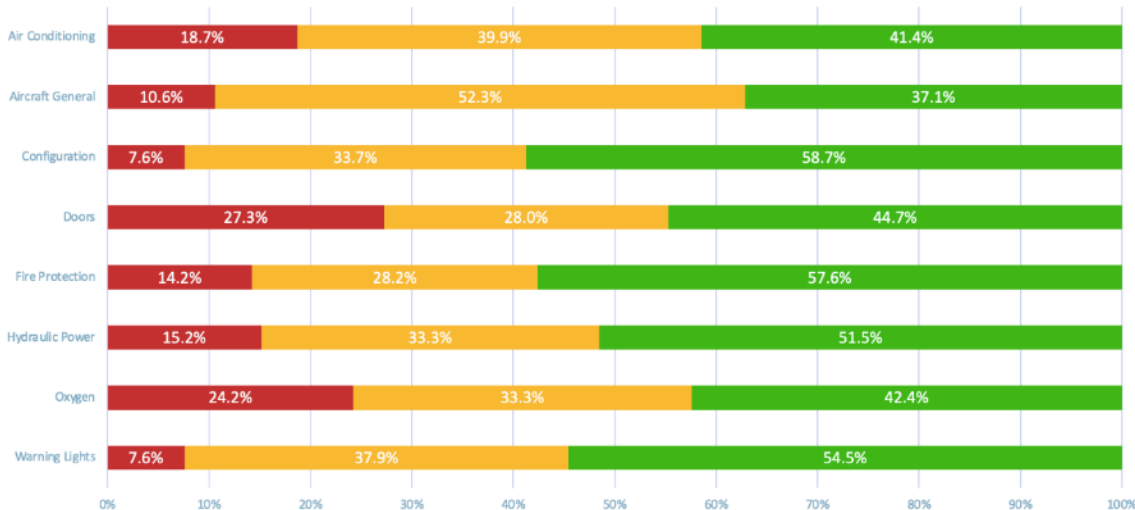


Regional Carrier: Boeing 737 Max Return to Service



2,152
Pilots

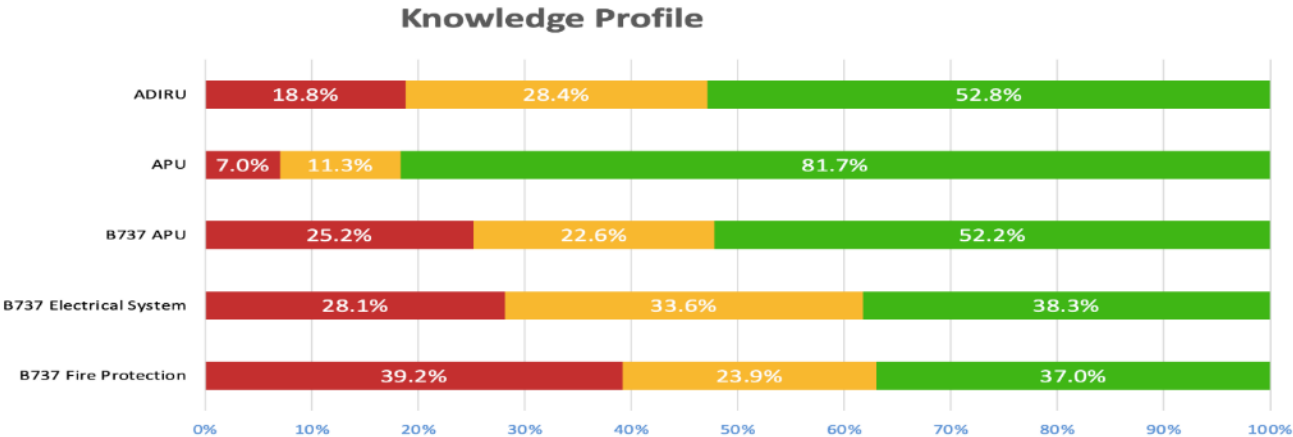
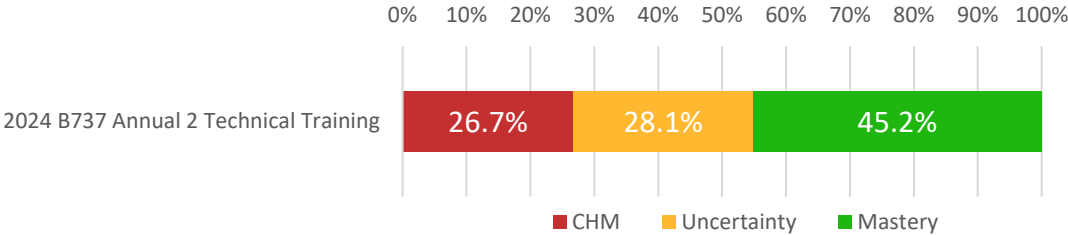
Knowledge Profile



40 minutes
on average to complete.

2024 B737 Annual AGT

December 2023 –March 2024



Airforce Pilot Training

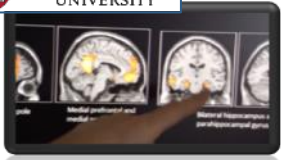


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The Healthcare Case Study

Leveraging Brain Science and AI to reduce patient harm and death



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